



## BREAD BOOK

### **William Greenwood**

Collection of recipes with bakers percentage and example weights. Recipes are stored in TOML format and periodically compiled to the website (<https://bread.ozva.co.uk>) and the accompanying printouts. This is done with a tool I built. Temperatures are listed in Celsius and should be assumed to be with fan when referring to baking. Currently 26 recipes at last compilation (March 5, 2026).

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- **Polish pre-ferment**. Recommended polish recipe from 'Taste of Bread'.
- **Milk bread**. Milk bread recipe (1) from Maria Floris' 'Bakery, cakes and simple confectionery' (p. 30)
- **Challah with pre-ferment**. Polish sweet-bread with polish.
- **Seeded Sourdough Rye**. Sourdough rye with seeds. Can be used as a guide for other seeded breads.
- **Panettone Imitation**. Imitation Panettone from 'Taste of Bread'.

# Ciabatta

Light Italian bread.

## Notes

High gluten is required for this so autolyse measurements have been provided. The gluten surface is very important for this one because the dough is not shaped as to retain as much air as possible. Use plenty of folds during ferment. Simply build up the bottom surface of the dough, using olive oil during folds for easy release, and tip out onto surface when fermented, divide and proof on surface.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	100%	276	552	1105	1657	2210
Autolyse Water	60%	166	331	663	994	1326
Water	18%	50	99	199	298	398
Salt	2%	5.52	11	22	33	44
Yeast	1.5%	4	8	17	25	33

# Levain De Pâte

Levain De Pate recipe from 'Taste of Bread'.

## Notes

This is from page 93 of Raymond Calvel's 'Taste of Bread' (or 'Le Goût De Pain').

The levain stage should be mixed and 1st speed for 10 minutes and then proof for 5-6h @ 24° (or 10h at 15-18°).

Main dough should be mixed at 1st speed for 5 minutes, autolysed for 30 minutes and then mixed at 2nd speed for 10 minutes (yeast added towards the end). Fermentation is 45 minutes followed by 35 minutes of dividing and resting. Proof for 1 hour 50 minutes (@27°) and bake for 25-40 minutes at 230°.

Dough temperature for both stages should be kept at the recommended 25°.

The recipe notes that ascorbic acid can be used at 20 ppm.

There is a disparity between the translation and the original which is 0.2% extra salt content in this recipe (1.8% total in the French original). Calvel states that when the dough is likely to be underdeveloped, 0.2% extra salt can be added to make up the difference. I have chosen to include this change because I enjoy mixing by hand.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Levain Flour	14.3%	37	74	149	223	298
Levain Water	8.58%	22	45	89	134	179
Levain Chef	3.58%	9	19	37	56	75
Main Flour	100%	260	521	1042	1562	2083
Main Autolyse Water	50%	130	260	521	781	1042
Main Water	14%	36	73	146	219	292
Main Salt	2%	5	10	21	31	42
Main Yeast	1%	2.6	5	10	16	21

## Kaiser rolls

Chainbaker kaiser rolls.

### Notes

This recipe is from Chainbaker, with only a small adjustment on the yeast. Each of these rolls should weigh around 110g. There is a specific way to plait these which I will try to describe: Roll the balls out into a length of around 20cm, tie a knot into the dough and pass the two loose ends back through the loop created so the ends are hidden. Can be brushed with milk or some other glaze and sprinkled with poppy seeds.

This is a brioche, so easily overheated, use cold milk or cool the flour off beforehand.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	100%	279	559	1117	1676	2235
Milk	44%	123	246	492	737	983
Egg	20%	56	112	223	335	447
Softened Butter	8%	22	45	89	134	179
Sugar	4%	11	22	45	67	89
Salt	2%	5.59	11	22	34	45
Yeast	1%	2.79	5.59	11	17	22

# Challah

Polish sweet-bread.

## Notes

This is a straight dough and quite dense, so no autolyse is necessary. This bread is traditionally plaited. If you're making large loafs, I would recommend a 3 strand plait. This recipes source has recently put it behind a paywall so consider this one pirated.

Glaze with a mix of egg whites and milk after shaping and before baking. You're aiming for around #802b00 at its darkest points and a hollow sounding base.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	100%	278	556	1111	1667	2222
Water	25%	69	139	278	417	556
Egg	25%	69	139	278	417	556
Honey	16%	44	89	178	267	356
Neutral Oil	12%	33	67	133	200	267
Yeast	1.5%	4	8	17	25	33
Salt	1%	2.78	5.56	11	17	22

# Panettone v3

Panettone.

## Notes

Recommended that sourdough started is used 3 hours after refreshing. Flavoring should be mixed up and left to rest for 12h minimum before being incorporated. Stage 1 will take around 12h to rise (under the conditions we attempted to bake this) so this lines up well. Additionally, soak raisins overnight. Incorporate yolks and sugar slowly to prevent dough splitting. Recommended flour protein content is 16%, this is not elaborated on and ash content is not listed so its difficult to know what the original authors where going for.

Apparently during ferment it should rise 250-300%. Bench rest should be 20 minutes and proof should be 5-6 hours.

Cooking temperature is listed as 165° for 50 minutes. It is traditionally scored with a cross with a piece of butter placed in the center.

Orange zest, lemon zest and vanilla pods are all listed in units, rather than grams.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Flavoring Honey	6.5%	6	12	24	36	47
Flavoring Orange Zest	80.6%	74	147	294	441	588
Flavoring Lemon Zest	32.3%	29	59	118	177	236
Flavoring Vanilla Pods	32.3%	29	59	118	177	236
Stage 1 Flour	100%	91	182	365	547	730
Stage 1 Water	40.3%	37	74	147	221	294
Stage 1 Sourdough	19.4%	18	35	71	106	142
Stage 1 Sugar	16.1%	15	29	59	88	118
Stage 1 Yolks	16.1%	15	29	59	88	118
Stage 1 Butter	24.2%	22	44	88	132	177
Stage 2 Flour	19.4%	18	35	71	106	142
Stage 2 Water	16.1%	15	29	59	88	118
Stage 2 Yolks	19.4%	18	35	71	106	142
Stage 2 Sugar	24.2%	22	44	88	132	177
Stage 2 Butter	32.3%	29	59	118	177	236
Stage 2 Rasins	29%	26	53	106	159	212
Stage 2 Orange Peel	29%	26	53	106	159	212
Stage 2 Citron Peel	14.5%	13	26	53	79	106
Stage 2 Salt	1.3%	1.19	2.37	4.74	7	9.49

# Sourdough white v4

Sourdough sandwich loaf, similar to french bread.

## Notes

This is adjusted from my Straight White v4.

It's listed at 10% wholemeal at the moment. This is negotiable. If you need to go more than  $\pm 10\%$  with the wholemeal, you might need to put together a different recipe or make the appropriate adjustments.

Bake in a loaf tin or shape into a boule.

Note that "Autolyse Water" is water to mix with the flour. "Water" can be mixed with the salt to help when mixing it into the dough or to incorporate the starter into the autolysed dough.

Note that it is assumed that the sourdough starter you're using has a hydration of 100%. Make the appropriate adjustments if not.

In our oven, this takes 30 minutes at 200° (fan), starting just before the oven has finished heating up.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	83%	250	500	1000	1500	2000
Wholemeal Flour	10%	30	60	120	181	241
Autolyse Water	50%	151	301	602	904	1205
Water	8%	24	48	96	145	193
Sourdough Starter	14%	42	84	169	253	337
Salt	1.5%	4.52	9	18	27	36

# Enikorn and spent ale grain sourdough

From Vanessa Kimbell's 'The Sourdough School' (p. 172)

## Notes

Spent grain is malted grains that have been used in the brewing process. This can be substituted for malted grain that has been soaked in beer. Unmalted grain can be substituted, but note that malted grain will slightly speed up the bulk ferment.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Leaven Flour	10.3%	21	42	83	125	167
Leaven Water	9.2%	19	37	74	112	149
Leaven Starter	2.6%	5	11	21	32	42
Water	84%	170	340	680	1020	1360
Flour	70%	142	283	567	850	1134
Enikorn Flour	30%	61	121	243	364	486
Sultanas	20%	40	81	162	243	324
Spent Grain	20%	40	81	162	243	324
Salt	2%	4	8	16	24	32

# Straight white yeasted v4

Regular white yeasted bread.

## Notes

I have included autolyse water measurements with this, although it may not be necessary. I imagine it depends on the flour and the kind of bread you like.

In the past, this has sat around 1.3% yeast. Although now I would be inclined to keep it lower (2-3h ferment). if you're short on time this could be brought up to 1.5% or higher (absolute maximum 2%).

It's listed at 10% wholemeal at the moment. This is negotiable. If you need to go more than  $\pm 10\%$  with the wholemeal, you might need to put together a different recipe or make the appropriate adjustments.

This bread is easy to handle and usually gives very good results.

Bake in a loaf tin or shape into a boule.

Note that "Autolyse Water" is water to mix with the flour. "Water" can be mixed with the salt to help when mixing it into the dough or to hydrate the yeast depending on the type you're using.

In our oven, this takes 30 minutes at 200° (fan), starting just before the oven has finished heating up.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	90%	269	539	1078	1617	2156
Wholemeal Flour	10%	30	60	120	180	240
Autolyse Water	55%	165	329	659	988	1317
Water	10%	30	60	120	180	240
Yeast	1%	3	6	12	18	24
Salt	1.5%	4.49	9	18	27	36

## Polish rye bread

Polish rye bread from Maria Floris' 'Bakery, cakes and simple confectionery' (p. 34)

### Notes

Floris says to start with half the flour, the sugar and two-thirds of the water, mix and leave for 48 hours till it becomes a sour levain. This has been included as a yeast-less preferment and is the only diversion of the recipe.

Other than this, made as standard, doubling in size during fermentation and proof. It is baked at 180C for 30 minutes and then 155C till the loaves are firm.

Add caraway seeds to taste.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Levain Medium Rye Flour	40%	122	244	488	732	976
Levain Water	42%	128	256	512	768	1024
Levain Sugar	0.55%	1.68	3.35	7	10	13
Medium Rye Flour	40%	122	244	488	732	976
White Flour	20%	61	122	244	366	488
Water	21%	64	128	256	384	512
Salt	0.75%	2.29	4.57	9	14	18
Yeast	1.25%	4	8	15	23	30

# Pompei Arculata

Ringed bread found and reconstructed from a specimen in pompeii.

## Notes

A single loaf is 85g to match the approximate size of the specimen. It's recommended that out of the number that you make, some should be for offering. Additional ingredients are sesame seeds (for the Greek 'koulouria') and nigella seeds (for the Turkish 'simit') and a glaze made from honey and water (4:3). Commonly paired with dried figs, prunes and chestnuts. To be formed into a ring.

A fresco in the Catacombs of St Callixtus shows 5 loafs of this bread, with its distinctive ring shape, alongside a fish; a reference to Jesus' miracle of the 'Feeding of the Five Thousand'. It was also found across Greek and Roman territories.

Recipe source linked on website.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Flour	54%	156	312	624	936	1249
Wholewheat Flour	46%	133	266	532	798	1064
Water	52%	150	301	601	902	1202
Honey	12.3%	36	71	142	213	284
Sourdough Starter	8%	23	46	92	139	185
Salt	1.5%	4.34	9	17	26	35

# Industrial Panettone

Industrial Panettone from 'Taste of Bread'.

## Notes

The monoglyceride/water should be mixed first for the emulsion, before the other emulsion ingredients are added and mixed till homogeneous and with a mayonnaise consistency

Note that you should also add 1 drop of orange essence per 1.27kg of the finished dough at the second stage.

Recommended fermentation time for each of the sponges is 4h. After mixing stage 1 for 3 minutes at first speed, the dough should be left to ferment for a recommended time of 10-12h before the stage 2 ingredients are added. Not that the raisins and candied fruit should be added at the end of this mixing stage, hold a small amount of the softened butter back to facilitate this. After this a further 40 minutes fermentation is recommenced. Bench rest should be 50 minutes. Proof time will be 10-11h at 27°C.

Calvel recommends baking at 210°C for 30-40 minutes. During cooling the Panettone should be hung upside down to prevent sinking.

I have linked an example pdf schedule of the bake that I've found to work.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Sponge 1 Starter	0.8%	1.4	2.81	5.61	8	11
Sponge 1 Water	0.56%	1	2	4	6	8
Sponge 1 Flour	1.04%	1.82	3.65	7	11	15
Sponge 2 Water	1.76%	3	6	12	19	25
Sponge 2 Flour	3.44%	6	12	24	36	48
Sponge 3 Water	5.48%	10	19	38	58	77
Sponge 3 Flour	10.92%	19	38	77	115	153
Stage 1 Emulsion Monoglyceride	0.7%	1.23	2.46	5	7.37	10
Stage 1 Emulsion Water	1.4%	2.46	5	10	15	20
Stage 1 Emulsion Butter	12.0%	21	42	84	126	168
Stage 1 Emulsion Egg Yolks	8.0%	14	28	56	84	112
Stage 1 Emulsion Sugar	6.0%	11	21	42	63	84
Stage 1 Flour	64%	112	225	449	674	898
Stage 1 Water	25%	44	88	175	263	351
Stage 1 Sugar	12.0%	21	42	84	126	168
Stage 1 Honey	1.74%	3	6	12	18	24
Stage 2 Flour	36%	63	126	253	379	505
Stage 2 Rasins	35%	61	123	246	368	491
Stage 2 Butter	19.32%	34	68	136	203	271
Stage 2 Candied Fruit	17.4%	31	61	122	183	244
Stage 2 Sugar	14.48%	25	51	102	152	203
Stage 2 Egg Yolks	9.4%	16	33	66	99	132
Stage 2 Orange Flower Water	5.8%	10	20	41	61	81
Stage 2 Salt	1.16%	2	4	8	12	16
Stage 2 Vanilla	0.12%	0.21	0.42	0.84	1.26	1.68

# Blackberry, poppy seed and pea flower water sourdough

From Vanessa Kimbell's 'The Sourdough School' (p. 130)

## Notes

This one is interesting because of the pH indicator properties of the tea. With a shorter fermentation and less acidity, the loaf turns a cobalt blue, but under a more intense fermentation, it goes a rich violet. To make the tea, brew 2-3 heaped tablespoons of butterfly pea flowers per 800g of water. Leave to cool, strain and then bring up to required temperature.

Blackberries (or blackcurrants), poppy seeds and aniseeds (optional) are all inclusions.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Leaven Flour	10.3%	22	44	88	131	175
Leaven Water	9.2%	20	39	78	117	157
Leaven Starter	2.6%	5.53	11	22	33	44
Flour	85%	181	362	723	1085	1447
Tea	80%	170	340	681	1021	1362
Blackberries	20%	43	85	170	255	340
Wholegrain Flour	10%	21	43	85	128	170
Poppy Seeds	10%	21	43	85	128	170
Rye Flour	5%	11	21	43	64	85
Salt	2%	4.26	8.51	17	26	34
Toasted Aniseeds	2%	4.26	8.51	17	26	34

# Ciabatta with pre-ferment

Light Italian bread with polish.

## Notes

High gluten is required for this so autolyse measurements have been provided. The gluten surface is very important for this one because the dough is not shaped as to retain as much air as possible. Use plenty of folds during ferment. Simply build up the bottom surface of the dough, using olive oil during folds for easy release, and tip out onto surface when fermented, divide and proof on surface.

Classically, the polish (also known as "poolish" or "Vienna bread") was baked using only a preferment for leavening although now it is common to use yeast in addition to the preferment. This can be done and at any level up to a maximum of an additional 1.5%. Pre-ferment should be mixed in advance (temp from mixer 25°) and rested for 3h minimum (at 25°) or 16h minimum refrigerated (at 4°). The polish here is 69% hydration and makes up 15% of the flour weight. It is taken from Raymond Calvel's "Taste of Bread". The polish alone can be found on this site for reference.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Polish Flour	15%	42	84	169	253	337
Polish Water	10.35%	29	58	116	174	233
Polish Salt	0.3%	0.84	1.69	3.37	5	7
Polish Yeast	0.15%	0.42	0.84	1.69	2.53	3.37
White Flour	85%	239	478	955	1433	1910
Autolyse Water	50%	140	281	562	843	1124
Water	17.65%	50	99	198	297	397
Salt	1.7%	5	10	19	29	38

## Classic white sourdough

From Vanessa Kimbell's 'The Sourdough School' (p. 114)

### Notes

Leaven has been integrated into the recipe. Leaven ready to use in 7-9 hours after mixing with a further 2 hours after that practical but suboptimal. This is based on an ambient temperature of 20-23C.

Kambell recommends flour between 11-13% protein. Diastatic malt is optional, but especially helpful with roller milled white.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Leaven Flour	10.3%	26	52	105	157	209
Leaven Water	9.2%	23	47	93	140	187
Leaven Starter	2.6%	6.6	13	26	40	53
Flour	80%	203	406	812	1218	1624
Water	74%	188	376	751	1127	1503
Wholemeal Flour	20%	51	102	203	305	406
Salt	2%	5	10	20	30	41
Diastatic Malt Powder	0.5%	1.27	2.54	5	7.61	10

## Levain De Pâte (wholemeal)

Levain De Pâte ajusted for cheap chapatti flour. Under development.

### Notes

The levain stage should be mixed and 1st speed for 10 minutes and then proof for 5-6h @ 24° (or 10h at 15-18°).

Main dough should be mixed at 1st speed for 5 minutes, autolysed for 30 minutes and then mixed at 2nd speed for 10 minutes (yeast added towards the end). Fermentation is 45 minutes followed by 35 minutes of dividing and resting. Proof for 1 hour 50 minutes (@27°) and bake for 25-40 minutes at 230°. It may be a good idea to perform one or more folds on the dough to get the desired structure with the weakened gluten network.

Dough temperature for both stages should be kept at the recommended 25°.

The recipe notes that ascorbic acid can be used at 20 ppm.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Levain Flour	14.3%	36	73	146	219	292
Levain Water	8.58%	22	44	88	131	175
Levain Chef	3.58%	9	18	37	55	73
Main Flour	100%	255	510	1020	1531	2041
Main Autolyse Water	50%	128	255	510	765	1020
Main Water	18%	46	92	184	276	367
Main Salt	2%	5	10	20	31	41
Main Yeast	1%	2.55	5	10	15	20

# Scandinavian buttermilk sourdough

From Vanessa Kimbell's 'The Sourdough School' (p. 141)

## Notes

If buying commercial buttermilk, Kimbell recommends adding 20g of butter to it per 850g. Recommended flours are enikorn, emmer or Oland.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Leaven Flour	10.3%	25	49	98	147	196
Leaven Water	9.2%	22	44	88	131	175
Leaven Starter	2.6%	6	12	25	37	50
Buttermilk	85%	202	405	810	1214	1619
Flour	50%	119	238	476	714	952
Heritage Wholegrain Flour	50%	119	238	476	714	952
Salt	2%	4.76	9.52	19	29	38
Toasted Caraway Seeds	2%	4.76	9.52	19	29	38

# Pain Au Levain

Pain Au Levain recipe from 'Taste of Bread'.

## Notes

This is from page 91 of Raymond Calvel's 'Taste of Bread' (or 'Le Goût De Pain'). This is made in three stages, each using the last, with the first one using peice of the last batch of bread (called a 'chef'). Calvel recommends a dough temperature of 25-26 °C for all the stages. The first stage is the 'rafrachi' (or 'refresher'), this should be mixed on low for 10 minutes and allowed to proof for 5-6h (3.5x starting volume). The second stage is the 'levain', this should be mixed on low for 10 minutes and allowed to proof for 4-6h (3.5x starting volume). The final stage is the complete dough that will become the finished loaf, it should be autolysed for 30 minutes before being mixed on low for 12 minutes. Fermentation should be 50 minutes, at this point a piece of dough can be torn off for the next batch and the bread can be divided and rounded over 10 minutes. Bench rest should be 10-20 minutes. Shaping is a further 10 minutes followed by a 4h proof stage (3.5-4x starting volume). The recipe also mentions that 0.2% yeast (maximum) can be used.

It is recommended that the bread is baked for 30-40 minutes at 230 °C (It's difficult to tell if this is 'fan' or not, especially since this was written in 1990 and was based on commercial bread ovens). The author does note that it should be baked at a lower temperature than yeasted breads due to the slowness of the oven-spring. Calvel also notes that a good crust is built on a relatively long baking time and a relatively low oven temperature. You're aiming for #834a1d on un-scored parts of the loaf with some areas darker (from the color plates).

This one has been organised slightly strangely and there is greater than 100% flour, there may be some mistake. I will be baking it to double-check. It is also a fairly spread out recipe, so may not be appropriate for a single loaf at a time unless you have very accurate scales. Autolyse in this one is 'optional' but highly recommended. Because of the higher acidity of sourdough, the gluten network is slower to develop. As much development as possible is desirable due to the comparatively lower leavening power of natural yeast cultures.

## Ingredients

	Bakers %	500g total	1kg total	2kg total	3kg total	4kg total
Rafrachi White Flour	2%	5	10	21	31	41
Rafrachi Water	1.2%	3	6	12	19	25
Rafrachi Chef	1.54%	4	8	16	24	32
Levain White Flour	5.24%	14	27	54	81	108
Levain Rye Flour	0.46%	1.19	2.37	4.74	7	9.48
Levain Water	3.41%	9	18	35	53	70
Levain Rafrachi	4.77%	12	25	49	74	98
Main White Flour	95%	245	490	979	1469	1959
Main Rye Flour	5%	13	26	52	77	103
Main Water	64%	165	330	660	990	1320
Main Levain	13.85%	36	71	143	214	286
Main Salt	1.8%	4.64	9	19	28	37

# White yeasted with polish pre-ferment v4

Less acidic flavor than the v4 sourdough.

## Notes

I have included autolyse water measurements with this, although it may not be necessary. I imagine it depends on the flour and the kind of bread you like.

Classically, the polish (also known as "poolish" or "Vienna bread") was baked using only a preferment for leavening although now it is common to use yeast in addition to the preferment. This can be done and at any level up to a maximum of an additional 1.5%.

It's listed at 10% wholemeal at the moment. This is negotiable. If you need to go more than  $\pm 10\%$  with the wholemeal, you might need to put together a different recipe or make the appropriate adjustments.

This bread is easy to handle and usually gives very good results.

Bake in a loaf tin or shape into a boule.

Note that "Autolyse Water" is water to mix with the flour. "Water" can be mixed with the salt to help when mixing it into the dough or to help incorporate the preferment.

Pre-ferment should be mixed in advance (temp from mixer 25°) and rested for 3h minimum (at 25°) or 16h minimum refrigerated (at 4°). The polish here is 69% hydration and makes up 15% of the flour weight. It is taken from Raymond Calvel's "Taste of Bread". The polish alone can be found on this site for reference.

In our oven, this takes 30 minutes at 200° (fan), starting just before the oven has finished heating up.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Polish Flour	15%	45	91	182	273	364
Polish Water	10.35%	31	63	125	188	251
Polish Salt	0.3%	0.91	1.82	3.64	5.45	7
Polish Yeast	0.15%	0.45	0.91	1.82	2.73	3.64
White Flour	75%	227	455	909	1364	1818
Wholemeal Flour	10%	30	61	121	182	242
Autolyse Water	50%	152	303	606	909	1212
Water	4.65%	14	28	56	85	113
Salt	1.2%	3.64	7	15	22	29

# Russian rye bread

From Vanessa Kimbell's 'The Sourdough School' (p. 127)

## Notes

Kambell recommends scalding the wholegrain flour. If not using leaven, 1 day to 1 week old sourdough discard may be used. Keep discard in fridge till included. Charcoal is optional. Seeds are lightly toasted coriander or caraway. Autolyse is 4 hours, maintain at 28C. After autolyse add all else, temp can then be dropped to 22-24C. Kambell recommends leaving for 2 days before eating to intensify the flavors.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Leaven Flour	35%	68	135	270	405	541
Leaven Water	31%	60	120	239	359	479
Leaven Starter	8.7%	17	34	67	101	134
Wolegrain Rye Flour	100%	193	386	772	1158	1544
Water	75%	145	290	579	869	1158
Black Treacle	5%	10	19	39	58	77
Seeds	2.75%	5.31	11	21	32	42
Salt	2.4%	4.63	9	19	28	37
Charcoal Powder	1%	2	4	8	12	15

## Kaiser rolls (vegan)

Under development.

### Notes

This recipe is from Chainbaker. Each of these rolls should weigh around 110g. There is a specific way to plait these which I will try to describe: Roll the balls out into a length of around 20cm, tie a knot into the dough and pass the two loose ends back through the loop created so the ends are hidden. Can be brushed with a milk alternative or some other glaze and sprinkled with poppy seeds.

It has been adjusted in the following ways: milk substituted for alternative (water % of milk differs little so this has not been changed), butter substituted for neutral oil (butter is 80% butterfat so alternative has been reduced by 20% and hydration has been increased by the equivalent.)

This is a brioche, so easily overheated, use a cooled milk alternative or cool the flour off beforehand.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	100%	281	562	1124	1685	2247
Milk Substitute	45.6%	128	256	512	769	1025
Silken Tofu	20%	56	112	225	337	449
Neutral Oil	6.4%	18	36	72	108	144
Sugar	4%	11	22	45	67	90
Salt	2%	5.62	11	22	34	45
Yeast	1%	2.81	5.62	11	17	22

## Milk bread (Palace Hotel)

Milk bread recipe (2) from Maria Floris' 'Bakery, cakes and simple confectionery' (p. 30).

### Notes

She says 'I have eaten very good milk bread in the Palace Hotel in St Moritz. All the food in the hotel was very good. I got this recipe from the manager of the confectionery department of the hotel kitchen under whose management everything had to be perfect. Now I give you her recipe:'

This one is a little more complex than recipe (1).

an additional 3.12% of diamalt powder can be added for flavor.

Dough must be firm not hard after mixing all but the eggs, butter and diamalt. Beat eggs and diamalt together and add. Slowly add the butter while kneeding.

Rise instructions are not clear.

Bake at 184C for 30-40 minutes.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Flour	100%	321	641	1282	1923	2564
Milk	27%	87	173	346	519	692
Egg	12.79%	41	82	164	246	328
Butter	12.5%	40	80	160	240	321
Yeast	3.12%	10	20	40	60	80
Salt	1.96%	6	13	25	38	50
Sugar	1.38%	4.42	9	18	27	35

## Polish pre-ferment

Recommended polish recipe from 'Taste of Bread'.

### Notes

The polish here is 69% hydration and should make up 15% of the flour weight. It is taken from Professor Raymond Calvel's "Taste of Bread". Pre-ferment should be mixed in advance (temp from mixer 25°) and rested for 3h minimum (at 25°) or 16h minimum refrigerated (at 4°). It should be mixed for 4 minutes at first speed and 3 minutes at second speed.

Note that he specifies between 1-2% yeast, which I have averaged to 1.5%. I would assume this can be changed to account for your schedule and environment.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	100%	291	581	1163	1744	2326
Water	69%	201	401	802	1203	1605
Yeast	1.5%	4.36	9	17	26	35
Salt	2%	6	12	23	35	47

## Milk bread

Milk bread recipe (1) from Maria Floris' 'Bakery, cakes and simple confectionery' (p. 30)

### Notes

Dissolve the yeast in the milk. Add all to bowl. Standard double during ferment and proof. Bake at 198C for 35-40 minutes.

### Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Flour	100%	311	621	1242	1863	2484
Milk	54%	168	335	671	1006	1342
Yeast	6.25%	19	39	78	116	155
Oil	1.5%	4.66	9	19	28	37
Salt	0.65%	2	4	8	12	16

# Challah with pre-ferment

Polish sweet-bread with polish.

## Notes

This is a straight dough and quite dense, so no autolyse is necessary. This bread is traditionally plaited. If you're making large loafs, I would recommend a 3 strand plait. This recipes source has recently put it behind a paywall so consider this one pirated.

Glaze with a mix of egg whites and milk after shaping and before baking. You're aiming for around #802b00 at its darkest points and a hollow sounding base.

Classically, the polish (also known as "poolish" or "Vienna bread") was baked using only a preferment for leavening although now it is common to use yeast in addition to the preferment. This can be done and at any level up to a maximum of an additional 1.5%. Pre-ferment should be mixed in advance (temp from mixer 25°) and rested for 3h minimum (at 25°) or 16h minimum refrigerated (at 4°). The polish here is 69% hydration and makes up 15% of the flour weight. It is taken from Raymond Calvel's "Taste of Bread". The isolated polish can be found on this site for reference.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Polish Flour	15%	42	85	169	254	339
Polish Water	10.35%	29	58	117	175	234
Polish Salt	0.3%	0.85	1.69	3.39	5	7
Polish Yeast	0.15%	0.42	0.85	1.69	2.54	3.39
White Flour	85%	240	480	960	1441	1921
Water	14.65%	41	83	166	248	331
Egg	25%	71	141	282	424	565
Honey	16%	45	90	181	271	362
Neutral Oil	12%	34	68	136	203	271
Salt	0.7%	2	4	8	12	16

# Seeded Sourdough Rye

Sourdough rye with seeds. Can be used as a guide for other seeded breads.

## Notes

This recipe was baked as part of the Salford Christmas market and had a moderate demand among a certain audience. It was the 2nd last to sell out, and was popular for being the "healthiest" as well as being vegan. As far as the health benefits go, I would personally doubt that homemade rye is significantly better than homemade white. There are, however, provable benefits of the LAB colonies present in sourdough (linked). I estimated it to cost around £0.74 per kilogram. Priced at £2 per loaf we easily sold 10 kilograms over 4 hours.

Autolyse measurements have been included but this may not be necessary.

For using seeds in bread, it is recommended that they are soaked for 1 hour before being used. This lines up nicely with the autolyse period. I have been told that this is so they cannot draw out water from the gluten network although I am unsure about this. This water is accounted for as "Soaker Water" and is double the weight of the seeds to be included. Any seeds can be used.

The sourdough starter is assumed to be 100% hydration.

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
White Flour	50%	128	255	510	765	1020
Rye Flour	50%	128	255	510	765	1020
Autolyse Water	30%	77	153	306	459	612
Soaker Water	20%	51	102	204	306	408
Water	19%	48	97	194	291	388
Sourdough Starter	15%	38	77	153	230	306
Seeds	10%	26	51	102	153	204
Salt	2%	5	10	20	31	41

# Panettone Imitation

Imitation Panettone from 'Taste of Bread'.

## Notes

This is from page 178 of Raymond Calvel's 'Taste of Bread' (or 'Le Goût De Pain'). It is described as 'An Imitation Panettone by Sponge and Dough Method'. He says 'A panettone can be leavened with baker's yeast. However, this is not an authentic panettone and remains only a pale imitation of the real thing in terms of flavor and keeping qualities. If the baker chooses not to use a naturally leavened sponge, the sponge and dough system, [this recipe] is the least objectionable method'.

Also include 2 drops of orange essence per kg of flour in the main dough.

Mix the sponge on low speed for 6 minutes then rest for 4h @25° (or 15h @4°). Add to the main dough and mix for 4 minutes on low, then 2nd speed beater for 10 minutes. Ferment for 1 hour 40 minutes (degassing at 50 minutes in) then divide and rest for 40 minutes. Proof for 2 hours 20 minutes then bake for 40 minutes @210°

## Ingredients

	<b>Bakers %</b>	<b>500g total</b>	<b>1kg total</b>	<b>2kg total</b>	<b>3kg total</b>	<b>4kg total</b>
Sponge Flour	25%	56	112	224	336	448
Sponge Water	14%	31	63	126	188	251
Sponge Yeast	0.5%	1.12	2.24	4.48	7	9
Flour	75%	168	336	673	1009	1345
Water	2%	4.48	9	18	27	36
Eggs	30%	67	135	269	404	538
Yeast	3.5%	8	16	31	47	63
Butter	25%	56	112	224	336	448
Whole Milk Powder	4%	9	18	36	54	72
Orange Flower Water	5%	11	22	45	67	90
Vanilla	0.01%	0.02	0.04	0.09	0.13	0.18
Raisins	30%	67	135	269	404	538
Candied Fruit	10%	22	45	90	135	179